Appeal No. VA97/5/010

AN BINSE LUACHÁLA

VALUATION TRIBUNAL

AN tACHT LUACHÁLA, 1988

VALUATION ACT, 1988

Irish Fertilizer Industries Ltd. **APPELLANT**

and

Commissioner of Valuation **RESPONDENT**

RE: Factory and grounds at Map Reference 1AB3H Marino, ED: Cobh Rural, RD: Cork Upper, Co. Cork

B E F O R E

Liam McKechnie - Senior Counsel	**Chairman**
George McDonnell - F.C.A.	**Member**
Barry Smyth - FRICS.FSCS	**Deputy Chairman**

JUDGMENT OF THE VALUATION TRIBUNAL
ISSUED ON THE 23RD DAY OF JUNE, 2000

By Notice of Appeal dated the 13th day of August 1997, the appellant appealed against the determination of the Commissioner of Valuation in fixing a rateable valuation of £10,350 on the above described hereditament.

The Grounds of Appeal as set out in the said Notice of Appeal are that; "the valuation is excessive, inequitable and bad in law. In addition items of plant included in the above valuation we claim are not rateable under current legislation".

1. This Appeal proceeded by way of an oral hearing at which the Appellant Company was legally represented by Mr. Owen Hickey, B.L. instructed by Coakley Moloney, Solicitors. The Commissioner of Valuation retained Mr. Willis Walsh B.L. who was instructed by the Chief State Solicitor. Written and oral evidence on behalf of Irish Fertiliser Industries Limited was given by three witnesses namely, Mr. Tadgh Donnelly, a Valuer with Messrs. Brian Bagnall & Associates, Mr. John Muddiman and thirdly Mr. Geoff Eastaway, both of whom were described as Plant Engineers with the Appellant Company. The Appeal Valuer, Mr. Terry Dineen gave evidence on behalf of the Commissioner. Following the conclusion of the evidence submissions were made both as to fact and law. Judgment was reserved.

2. In 1987 the Appellant Company owned as to 51% by the State and as to 49% by I.C.I. of the UK, was formed and since then has both occupied and operated a fertiliser manufacturing plant, formerly under the control of NET, at Marino Point in Cork Harbour. Two major products are manufactured namely, liquid ammonia at 1,600 tonnes per day of which about two thirds is either shipped or railed out and secondly prilled urea at a 1,100 tonnes per day. This is principally a nitrogenous fertiliser but a significant percentage is used as raw material in other industries.

3. The entire rateable elements of this Plant have a valuation of £10,350 placed thereon. At issue in this Appeal is the rateability of two items only namely, to use a neutral term, a structure known as the reformer or reforming furnace and secondly the structure known as the Prill tower. Quantum on these two items have been agreed at £600 and £200 respectively.

4. **<u>The Furnace:</u>**

(a) Ammonia is a chemical compound containing hydrogen (H2) and nitrogen (N2). The structure of this compound is represented by the chemical formula NH3. The manufacture of Ammonia requires the production of pure hydrogen and pure nitrogen gas. In the Ammonia Plant Section of the Enterprise above described the

hydrogen is obtained from Natural Gas (methane). Methane contains hydrogen and Carbon (C) chemically bonded together and is represented by the chemical formula CH4. The nitrogen is obtained from the air, which is a mixture of Nitrogen and Oxygen. The function of the furnace, which is otherwise known as the reformer, or primary reformer or reforming furnace, is to break the chemical bond joining the carbon to the hydrogen in the methane thus releasing pure Hydrogen. This is achieved by first mixing the Methane with water (in the form of steam) and then passing the mixture through heated catalyst filled tubes in the furnace. Water contains Hydrogen and Oxygen (O2) represented by the chemical formula H_20. Under the conditions of high temperature and pressure that exist in the catalyst filled primary reformer tubes the steam reacts with the Methane, the chemical bond between the Carbon and the Hydrogen in the Methane is broken and the Carbon combines with the Oxygen in the water to make Carbon Monoxide (CO) and Carbon Dioxide (CO2) releasing the hydrogen. The catalyst contained in the reformer tubes increases the speed of the above reaction to a commercial rate. So, at the beginning of this process methane is mixed with water in the form of steam and the end of the process results in the existence of Hydrogen, Carbon Monoxide and Carbon Dioxide.

This reformer or furnace is physically an insulated steel box about 20 meters square and 6 to 8 meters high in which 520, 100mm diameter by 10 metres long steel tubes are suspended vertically. Each tube is filled with catalyst. The tops of all tubes are connected together as are the bottoms. The outsides of the tubes are heated by 198 gas fired burners mounted at the top of the box. The methane and steam mixture is introduced continuously under pressure to the top of the tubes and flows vertically downwards through the catalyst contained in the tubes. As the mixture flows down the tubes and heats up the above mentioned reaction takes place. The resulting mixture is as stated Hydrogen, Carbon Monoxide and Carbon Dioxide and these go the next section of the plant for further processing.

The Prill Tower:

(b) This tower is circular in shape approximately 50 meters high and 16 meters in diameter. It has an enclosed lift shaft attached. It forms the final stages of the urea manufacturing process, in which a stream of molten urea at 140 degrees centigrade is converted into small spherical particles of solid urea (called prills) at ambient temperatures. These prills are then swept through a slot in the floor of the tower by a continuously revolving scraper on to a conveyer belt, which removes them to a store.

Set on the roof of the tower are six fans which draw large volumes of cooling air up through the tower from opes set in the walls just above the tower floor. A perforated bucket mounted on a motor driven shaft is set centrally and just below the roof level of the tower. The bucket rotates at about 250 rpm.

The molten urea is pumped to the top of the structure through a 3 inch pipe and it feeds into the rotating bucket which has thousands of small holes drilled in its walls. The action of rotation of this bucket spins the molten urea out of the holes to form a spray of droplets which descend through the tower against a current of cold air which is drawn up the tower by the fans. As the droplets fall they cool and solidify into hard spherical prills. To enhance their resistance to crushing during subsequent handling operations a very fine powder is blown in through one of the opes at the base of the tower. As this dust is carried up the tower in the up draft of the cooling air, it impacts with the falling prills, and this impaction improves crystal formation within the droplets as they solidify, and makes them more resistant to crushing during subsequent bagging or handling of the product.

Depending on the grade of product being produced, between 20 and 40 tonnes of prills fall through the tower every hour and are continuously transferred to storage by conveyor.

5. The above description of the structures in question and the activities carried on therein are not in dispute.

6. On behalf of the Appellant Company Mr. Hickey submits firstly that both the reformer and the Prill Tower are "machinery" (being non-motive power machinery) as so defined in the substituted Section 7 of the Act of 1860 and accordingly are entitled to exemption from rating. Secondly and in the alternative he submits that both constitute a plant, which is not rateable, as being a construction, within reference no. 1 of the schedule to the 1860 Act (as inserted by Section 8 of the 1986 Act). He says that such units are designed or used primarily to induce a process of change in the substance contained or transmitted and therefore come within the exclusion as contained within this said reference number.

He rejected, as being quite unsustainable, a suggestion made on behalf of the Commissioner that the Prill Tower is a building within Section 12 of the 1852 Act and in support of this rejection he referred the Tribunal to the case of ***Cement Limited –v- the Commissioner of Valuation 1958 IR 283,*** and in particular at 301 and also to a Tribunal decision in the case of ***Midland Malting Company Ltd. –v- the Commissioner of Valuation,*** Judgment given on the 30th of May 1990. In particular he placed much reliance on what the Tribunal said when dealing with the hereditament therein described as "the redler vessel". See page 45 and following of that Judgment.

7. On behalf of the Commissioner it was submitted that the primary reformer was a "*furnace or boiler*". As reference no. 2 in the said schedule to the Act of 1860 made "*all fixed furnaces, boilers, ovens and kilns*" rateable, it was thus suggested that by name this structure should be so rated. Secondly, in addition to suggesting that the Prill Tower should be rated as a building the Commissioner also alleged that it could be rated under, Indent 1 of Section 3 of the Act of 1986 wherein "*all constructions affixed to land or tenements, other than buildings referred to in Section 14 of this Act"*, are deemed rateable.

8. As is evident from the activity carried on within the primary reformer a crucial element in the production of pure Hydrogen is the application of pressure and high temperature to the mixture of methane and water. It is the twin application of pressure and temperature, which results in the creation of Hydrogen, Carbon Monoxide and Carbon Dioxide. The process was summed up concisely by Mr. Dineen when he said that, heat up to 900 degrees centigrade is applied by 198 forced – draught burners and this combined with 35 bars pressure causes the raw materials of natural gas and steam to change into the chemicals above described. Accordingly the first question for our consideration in the context of this reformer is to decide whether or not this structure is a furnace or boiler within reference No. 2 of the above identified schedule.

9. In considering this matter this Tribunal, though conscious of the description given to this structure by the former occupier namely NET, does not consider such a description to be in any way conclusive or binding upon us. Rather the question must be considered from the evidence and submissions so tendered and made during the course of this hearing.

A similar question arose in the case of the ***Irish Oil Refining Company –v- the Commissioner of Valuation,*** Judgment delivered on the 10th of November 1989. In that case several units were in issue some as to rateability and some as to quantum. One group of these units was described as "*process heaters/furnaces*". Evidence was given that there were 8 such process heaters in the Refinery. These were associated with the crude distillation, the gas oil desulpherisation and the powerformer units. The heaters consisted of a series of six-inch diameter alloy steel tubes constructed within the refractory lining of the steel shell of the heater. In the floor of the heater were located a number of large gas and oil fired burners which heated the external surfaces of the tubes. Following the processing of the raw crude oil in the tanks at Corkbeg, the prepared crude oil was pumped at high pressure to the process heater. It flowed through the internals of the tubes and picked up heat as it travelled. Throughout there was the application of force for the specified purpose of changing the composition of the prepared crude or feedstock into a mixture of vapour and liquid for the next stage of the process. At the exit of the heater the prepared crude had been changed to 60% vapour and 40% liquid at

a temperature of 680 degrees fahrenheit and was pressurised to flow to the distillation tower for further processing. See pages 17 and 33 of the Judgment for further details of these heaters and their component parts. In accepting the submissions that these heaters were rateable the Tribunal at page 49 said

> "*with regard to the process heaters, it would appear that in previous hearings before the Circuit Court these may have been referred to as 'furnaces'*." The Tribunal would not be influenced by the appellation that the parties attached to any particular installation. It must decide whether the "*process heater"* is a furnace or a boiler within the meaning of those words set out at Reference No. 2 to the same Schedule.
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> "*Furnace"* is defined in its primary meaning in the Oxford English Dictionary (2nd Ed, 1989) as:- "*an apparatus consisting essentially of a chamber to contain combustibles for the purpose of subjecting minerals, metals etc., to the continuous action of intense heat"*.
>
> The Tribunal is in no doubt that this is a modern "*furnace"* but essentially a furnace is what it is. If it is not a furnace it is a boiler if it is not a boiler it is a plant within the wider meaning of plant contained at Reference No. 1 to the same schedule which embraces "*all constructions"* which are "*used for the containment of a substance or for the transmission of a substance"*.

10. In our view this decision, which we respectfully agree with, is clear-cut authority for the proposition advanced on behalf of the Commissioner. We are quite satisfied, in accordance with the principles outlined in the decision above referred to that the primary reformer is a furnace or a boiler within the meaning of those terms as contained in Reference No. 2 of the Schedule to the 1860 Act. Accordingly we accept and so determine that this reformer is rateable.

11. In the case of ***Denis Coakley & Co., Ltd –v- the Commissioner of Valuation, 1996 2 ILRM 90,*** the Supreme Court dealt with *interalia* whether or not grain silos, in the Appellant's Company, constituted a manufactory for the purposes of the Act of 1860 and secondly whether the said silos also constituted machinery other than for the production of motive power. If both questions were answered in the affirmative then the hereditament in question was exempt from rateability. For the purposes of this exercise the substituted Section 7 of the 1860 Act, which was inserted by the 1986 Act, is exactly the same as the original Section 7 of the earlier Act.

12. Mr. Justice Egan in giving the Judgment of the Supreme Court, at page 94, referred to ***Cronin (Inspector of Taxes) –v- Strand Dairy Limited H/C U/R 1985*** which case concerned the meaning of the words "*goods manufactured"*. The issue concerned milk and what the Defendant Dairy did with that raw material. In essence it applied heat, to a particular temperature for a particular period of time. The procedures were indeed sophisticated and required skill. The Learned High Court Judge held that the ultimate product could not be said to be manufactured unless the alleged manufacturing process impinged itself upon the raw material in such a way as to bring about some change of or in the substance subjected to the process. He approved strongly of the following passage from the High Court judgment

> "*having heard the facts and arguments I was of the opinion that the matter had to be considered from the commercial aspect, it could not be determined without taking economic realities into account. I was satisfied that the Company does enough to the raw material to make it, in the final analysis, a commercially different product"*.

These principles of law were accepted by the Supreme Court. Accordingly for there to be a "*manufactory"* the process must bring about some change in the substance subjected to the process and that can be satisfied if in the final analysis there emerges a commercially different product. On the facts of Denis Coakley's case the Supreme Court held that by the use of force by mechanical means, namely silos requiring

agitation, that this could be described as "*machinery*". Both questions were therefore answered in the affirmative.

13. In addition could we also specifically refer back to Reference No. 1 of the Schedule of the Act of 1860 and refer again to constructions, which are affixed to a Mill or Manufactory or Building, some of which are rateable and some of which are not. The excluding category are all constructions which are designed or used primarily to induce a process of change.

14. In our respectful opinion, on the authorities above mentioned, it is our view that the Prill Tower is entitled to exemption from rating. We are satisfied that the molten urea, which is the raw material, is impinged by the process and as a result some change in that substance occurs. In fact solid prills are the converted substance. Given the complicated process as outlined above which is involved in this change it is our opinion that this unit is not rateable and accordingly we so determine.